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A New Marine Ciliate *Cirrhogaster monilifer* n. g. n. sp.

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Lepsi in 1928 described a curious ciliate *Gastrocirrhus intermedius*, of whose systematic position he considered that *Gastrocirrhus* stood in the intermediate position between the suborders of Oligotricha and Hypotricha. Though the ciliate was suspected by Kahl as a broken piece of *Oxytrichide*, Lepsi mentioned that he obtained the animalcules in some considerable number in unique morphological state.

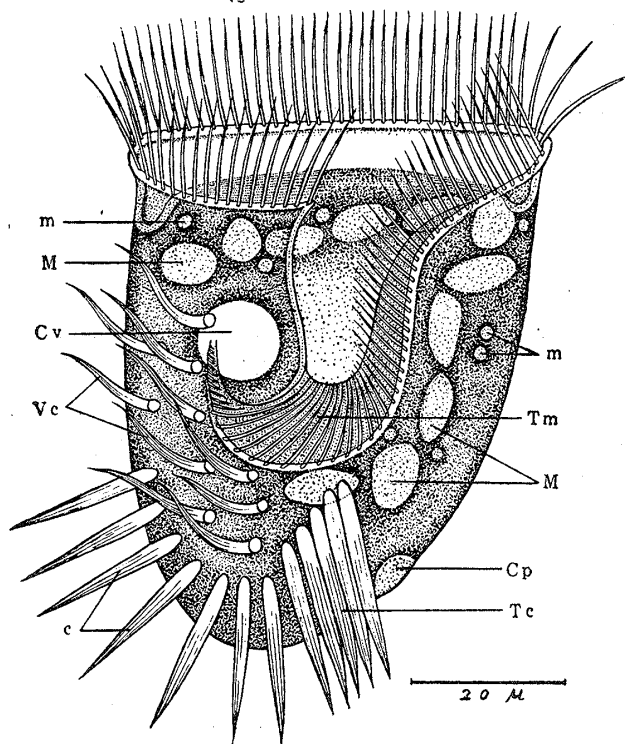
We obtained a ciliate from the coast of the Setonaikai near the marine biological station of Hiroshima University, which, as will be seen from the description and subsequent discussion, is closely related to the European form *Gastrocirrhus intermedius*.

The resemblance between these two forms is so close that at first sight it appeared desirable to include them in the same genus, but the closer examination revealed that, they are so different in the shape of the body and macronucleus and in the arrangement of the cirri as to necessitate them to be classified under different genera.

Cirrhogaster monilifer n.g. n. sp.

General morphology: Body length 95–105 μ ; width 75–90 μ . The body is cup-shaped or subquadrangular; the posterior border is rounded, the anterior one truncate. The anterior border is surrounded by a sub-circular wreath of large cirrose cilia which are closely arranged and averages 20 microns in length. The wreath of cilia, however, is interrupted on its ventral aspect by a deep cleft, which expands downward to form a peristomal field equal to one-half of the length of the body. The left border of the peristomal cleft is margined by the extension of the anterior wreath of cilia and provided with one translucent membrane on its lower portion. This membrane is located on the outer side of the cleft and covers the

spiral winding of the adoral ciliary zone. The narrow tubular cytopharynx is situated in the middle region of the body and leads from the bottom of the peristomal field to the interior endoplasm in a curved line transverse to the long axis of the organism. The macronucleus forms a semicircular



Cirrogaster monilifer. Ventral aspect. Bouin's: Heidenhain's haematoxylin.

| | |
|----------------------|-------------------------|
| Cp. Cytopyge | Cv. Contractile vacuole |
| M. Macronucleus | m. Micronucleus |
| Tc. Transverse cirri | Tm. Transverse membrane |
| Vc. Ventral cirri | |

band, moniliform, and usually consists of from 11 to 15 beads or chromatin mass tied up in a string. The micronuclei are numerous, usually eight in number, and scattered here and there surrounding the elongated macronucleus. In live material, the macro- and micronuclei are homogeneous transparent masses of slightly different tint from the surrounding cytoplasm. In fixed material the chromatin shrinks to its normal bulk, forming a deeply staining mass. The contractile vacuole is single and located in the central region, near the cytopharynx. The cytopyge is situated in the left posterior margin of the body. Ten ventral cirri are situated in the posterior half of the ventral surface,

slightly towards the right side from the median line. Twelve transverse cirri are developed near the posterior margin of the ventral surface slightly towards the right side on its ventral aspect and form a single transverse row.

Habitat and Locality: The animalcule always creeps on the surface of the leaflet of some species of seaweed (*Sargassum enerve*, *S. Thunbergii*) by using the ventral and transverse cirri, but sometimes suddenly springs a short distance and stops, then the wreath of cilia vibrates actively, arising the small whirlpool. No form of contraction or metaboly has been seen in the living organism, although the ventral and transverse

cirri can be bent easily like the foot when the organism creeps on the surface. This ciliate can be frequently found on the low tide line near Onomiti Marine Biological Station in autumn.

Remarks: We can not refer to the original paper of Lepsi but the basis on which he considered *Gasterocirrhus intermedius* as an intermediate form between the Sub-orders of Oligotricha and Hypotricha seems to lie in the shape and position of the adoral zone and the presence of the cirri which lie on the ventral surface of the dorsoventrally flattened body. The former structure characterizes Oligotricha while the latter is a characteristic peculiarity of Hypotricha.

The present species is most closely related to *Gasterocirrhus intermedius* representing also the intermediate character, but differs from the latter in some considerable points. At first the body is not flattened dorsoventrally as *G. intermedius*, and the cross section of the body is roundish in contour. The macronucleus is moniliform instead of oval, and the micronucleus is numerous. The general shape of the body that is cup-like and the structure of the adoral zone call our attention and makes us compare this species with the families Strobilidiidae and Halteridae of the Suborder Oligotricha. But the members of these families lack the ventral cirri which are to be found usually in the members of the Sub-order Hypotricha. *Halteria grandinella* var. *cirrifera* is only one species reported as provided with cirri, which are projected from small pits regularly arranged on the equator of body. This species is different from the present species in the arrangement of the cirri, in the shape of macronucleus, in the number of micronuclei and in the habitat. The macronucleus is oval with a micronucleus, and found in fresh water.

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